WEST Search History

DATE: Monday, June 24, 2002

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB; PLUR=YES; OP=ADJ			
L5	L4 and ammoni$	19	L5
L4	L2 and gas$	29	L4
L3	L2 and (ammoni$ near5 gas$)	0	L3
L2	L1 and (univers$ near3 link$)	95	L2
L1	(rna or dna or ribonucl$ or deoxyribonucl$ or oligonucl$) near5 synth$	33743	L1

END OF SEARCH HISTORY

```
 s (dna or rna or oligonucl?) (3n) synth?
L1      390977 (DNA OR RNA OR OLIGONUCL?) (3N) SYNTH?

=> s l1 and (univers? link?)
L2          15 L1 AND (UNIVERS? LINK?)

=> s l2 and (cleav?)
L3          15 L2 AND (CLEAV?)

=> rem dup l3
DUP IS NOT VALID HERE
The DELETE command is used to remove various items stored by the
system.

To delete a saved query, saved answer set, saved L-number list, SDI
request, batch request, mailing list, or user-defined cluster, format,
or search field, enter the name.  The name may include ?  for left,
right, or simultaneous left and right truncation.

Examples:

  DELETE BIO?/Q           - delete query names starting with BIO
  DELETE ?DRUG/A          - delete answer set names ending with DRUG
  DELETE ?ELEC?/L         - delete L-number lists containing ELEC
  DELETE ANTICOAG/S       - delete SDI request
  DELETE ENZYME/B         - delete batch request
  DELETE .MYCLUSTER       - delete user-defined cluster
  DELETE .MYFORMAT        - delete user-defined display format
  DELETE .MYFIELD         - delete user-defined search field
  DELETE NAMELIST MYLIST  - delete mailing list

To delete an ordered document or an offline print, enter its
number.

Examples:

  DELETE P123001C         - delete print request
  DELETE D134002C         - delete document order request

To delete an individual L-number or range of L-numbers, enter the
L-number or L-number range.  You may also enter DELETE LAST followed
by a number, n, to delete the last n L-numbers.  RENUMBER or
NORENUMBER may also be explicitly specified to override the value of
SET RENUMBER.

Examples:

  DELETE L21              - delete a single L-number
  DELETE L3-L6            - delete a range of L-numbers
  DELETE LAST 4           - delete the last 4 L-numbers
  DELETE L33-             - delete L33 and any higher L-number
  DELETE -L55             - delete L55 and any lower L-number
  DELETE L2-L6 RENUMBER   - delete a range of L-numbers and
                            renumber remaining L-numbers
  DELETE RENUMBER         - renumber L-numbers after deletion of
                            intermediate L-numbers

Entire sets of saved items, SDI requests, batch requests, user-defined
items, or E numbers can be deleted.
```

```
DELETE SAVED/Q - delete all saved queries
DELETE SAVED/A - delete all saved answer sets
DELETE SAVED/L - delete all saved L-number lists
DELETE SAVED   - delete all saved queries, answer sets,
                 and L-number lists
DELETE SAVED/S - delete all SDI requests
DELETE SAVED/B - delete all batch requests
DELETE CLUSTER - delete all user-defined clusters
DELETE FORMAT  - delete all user-defined display formats
DELETE FIELD   - delete all user-defined search fields
DELETE SELECT  - delete all E-numbers
DELETE HISTORY - delete all L-numbers and restart the
                 session at L1
```

To delete an entire multifile SDI request, enter DELETE and the name of the request. To delete a component from the multifile SDI, enter DELETE and the name of the component.

```
=> dup rem l3
PROCESSING COMPLETED FOR L3
L4             5 DUP REM L3 (10 DUPLICATES REMOVED)

=> d l4 1-5 ibib abs

L4   ANSWER 1 OF 5  CA  COPYRIGHT 2002 ACS                DUPLICATE 1
ACCESSION NUMBER:        136:369951  CA
TITLE:                   Cleavage of universal
                         linkers from an oligonucleotide for
                         solid phase synthesis with gaseous
                         nucleophilic amino compound
INVENTOR(S):             Pires, Richard M.; Gebeyehu, Gulilat
PATENT ASSIGNEE(S):      Invitrogen Corporation, USA
SOURCE:                  PCT Int. Appl., 24 pp.
                         CODEN: PIXXD2
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.         KIND  DATE          APPLICATION NO.   DATE
     ---------------    ----  --------      ----------------  --------
     WO 2002038728      A2    20020516      WO 2001-US43013   20011108
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
            CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
            GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
            PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA,
            UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
            DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
            BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.:                    US 2000-246713P  P  20001108
AB   The invention relates to a method for cleaving a linker, which
     attaches an oligonucleotide to a solid phase, from an oligonucleotide to
     give free oligonucleotide comprising contacting an oligonucleotide-linker-
     solid phase conjugate with an effective amt. of a gaseous nucleophilic
     amine compd. under conditions that result in the removal of the linker,
     thereby yielding the free oligonucleotide. Specifically, the invention
     relates to a method for cleavage of a linker from an
     oligonucleotide, comprising contacting a conjugate comprising an
```

cmpn. under conditions that result in the **cleavage** of an ester linkage between the first constituent of the oligonucleotide (usually the 3'-OH of the 3' terminal nucleotide) and the phosphate of the linker, resulting in the **cleavage** of the oligonucleotide from the linker. In a most preferred embodiment, the oligonucleotide, linker, solid support conjugate will be reacted with hydrated ammonia vapors at about 45.degree. for about 120 min.

L4 ANSWER 2 OF 5 SCISEARCH COPYRIGHT 2002 ISI (R)
ACCESSION NUMBER: 2001:935552 SCISEARCH
THE GENUINE ARTICLE: 498VF
TITLE: Linker phosphoramidite reagents for **oligonucleotide synthesis** on underivatized solid-phase supports
AUTHOR: Pon R T (Reprint); Yu S Y
CORPORATE SOURCE: Univ Calgary, Dept Biochem & Mol Biol, Calgary, AB T2N 4N1, Canada (Reprint)
COUNTRY OF AUTHOR: Canada
SOURCE: TETRAHEDRON LETTERS, (17 DEC 2001) Vol. 42, No. 51, pp. 8943-8946.
Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
ISSN: 0040-4039.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 28
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Linker phosphoramidite reagents containing a protected nucleoside with a **cleavable** 3'-ester linkage to either succinic acid, diglycolic acid, or hydroquinone-O,O'-diacetic acid (Q-Linker) allow the 3'-terminal nucleoside of an oligonucleotide sequence to be attached to underivatized 'Universal' amino or hydroxyl supports. After solid-phase **oligonucleotide synthesis,** treatment with NH4OH **cleaves** the 3'-ester link to the support and produces oligonucleotides with only 3'-OH ends. No changes to existing phosphoramidite synthesis cycles, **cleavage,** or deprotection methods are required. (C) 2001 Published by Elsevier Science Ltd.

L4 ANSWER 3 OF 5 CA COPYRIGHT 2002 ACS DUPLICATE 2
ACCESSION NUMBER: 132:50213 CA
TITLE: Universal allyl linker for solid-phase nucleic acid synthesis
INVENTOR(S): Zhang, Xiaohu; Jones, Roger A.
PATENT ASSIGNEE(S): Rutgers the State University of New Jersey, USA
SOURCE: U.S., 10 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6205129	A	19991231	US 1997-812139	19970306
			US 1996-1694PP P	19960506

PRIORITY APPLN. INFO.:
OTHER SOURCE(S): MARPAT 132:50213

AB A **universal linker** for solid-phase nucleic acid synthesis that is **cleaved** under conditions orthogonal to those used during the synthesis and deprotection of nucleic acids such as dsDNA or RNA fragments is disclosed. The invention includes compds. of the

more preferably from 1 to about 100 or greater; R2 = alkyl (C1-20) or greater; X = 4,4'-dimethoxytrityl.

L4 ANSWER 4 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
ACCESSION NUMBER: 1999:402703 BIOSIS
DOCUMENT NUMBER: PREV199900402703
TITLE: A phosphate bound **universal linker** for **DNA synthesis**.
AUTHOR(S): Lyttle, Matthew H. (1); Dick, Daren J.; Hudson, Derek; Cook, Ronald M.
CORPORATE SOURCE: (1) Biosearch Technologies, Inc., 81 Digital Drive, Novato, CA, 94949 USA
SOURCE: Nucleosides & Nucleotides, (Aug., 1999) Vol. 18, No. 8, pp. 1809-1814.
ISSN: 0732-8311.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English
AB A uridine-based linker immobilized onto polystyrene beads at the 5' terminus via a phosphodiester group and then used as a universal **DNA synthesis** support gives post **synthesis** **DNA cleavage** in 8 hrs or less without alkali metal salts. DNA produced with the new support was analyzed by HPLC, MALDI mass spectroscopy and PAGE. Each analysis showed DNA of equivalent quality to that produced with standard CPG supports, without contaminating materials resulting from linker or support backbone decomposition.

L4 ANSWER 5 OF 5 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 4
ACCESSION NUMBER: 1996:423174 BIOSIS
DOCUMENT NUMBER: PREV199699154230
TITLE: A new **universal linker** for solid phase **DNA synthesis**.
AUTHOR(S): Lyttle, Matthew H. (1); Hudson, Derek; Cook, Ronald M.
CORPORATE SOURCE: (1) Biosearch Technologies Inc., 40 Mark Drive, San Rafael, CA 94903 USA
SOURCE: Nucleic Acids Research, (1996) Vol. 24, No. 14, pp. 2743-2798.
ISSN: 0305-1048.
DOCUMENT TYPE: Article
LANGUAGE: English
AB A method is described as an alternative to the use of nucleoside pre-functionalized supports for **DNA synthesis**. The procedure should allow the generation of 3'-OH terminal moieties of any natural or modified DNA fragment using a single derivatized solid support material. The method utilizes 1-O-(4,4'dimethoxytrityl)-2O-succinoyl-3-N-allyloxycarbonylpropane immobilized on amino-propyl CPG followed by subsequent coupling of unit phosphoramidites. Work up is accomplished by removal of the 3-N-allyloxycarbonyl group (Pd(0) at 50 degree C for 15 min followed by **cleavage** under very mild conditions (aqueous TEAA(NH4+) buffer pH , , room temperature) to release the desired product. The mechanism is believed to involve nucleophilic attack of the linker derived amine group on the 3 phosphate triester, followed by elimination of the desired product. **DNA synthesis** with the new support and with classical nucleotide synthesis supports have been performed, and the products shown to be identical. Further proof of product integrity was given by MALDI mass spectral studies and the efficacy of DNA primers made with the new support in PCR amplification.

=> d his

```
     FILE 'BIOSIS, MEDLINE, SCISEARCH, CA, CAPLUS' ENTERED AT 09:30:30 ON 24
     JUN 2002
L1        390977 S (DNA OR RNA OR OLIGONUCL?) (3N) SYNTH?
L2            15 S L1 AND (UNIVERS? LINK?)
L3            15 S L2 AND (CLEAV?)
L4             5 DUP REM L3 (10 DUPLICATES REMOVED)

=> s l1 and (univers? (3N) link?)
L5            38 L1 AND (UNIVERS? (3N) LINK?)

=> dup l5 rem
PROCESSING COMPLETED FOR L5
L6            24 DUP REM L5 (24 DUPLICATES REMOVED)

=> s l6 and cleav?
L7             9 L6 AND CLEAV?

=> s l7 and gas?
L8             1 L7 AND GAS?

=> d l8 ti

L8   ANSWER 1 OF 1  CA  COPYRIGHT 2002 ACS
TI   Cleavage of universal linkers from an
     oligonucleotide for solid phase synthesis with
     gaseous nucleophilic amino compound


=> d l7 1-9 ibib abs

L7   ANSWER 1 OF 9  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER:    1999:402703  BIOSIS
DOCUMENT NUMBER:     PREV199900402703
TITLE:               A phosphate bound universal linker for
                     DNA synthesis.
AUTHOR(S):           Lyttle, Matthew H. (1); Dick, Daren J.; Hudson, Derek;
                     Cook, Ronald M.
CORPORATE SOURCE:    (1) Biosearch Technologies, Inc., 81 Digital Drive, Novato,
                     CA, 94949 USA
SOURCE:              Nucleosides & Nucleotides, (Aug., 1999) Vol. 18, No. 8, pp.
                     1809-1824.
                     ISSN: 0732-8311.
DOCUMENT TYPE:       Article
LANGUAGE:            English
SUMMARY LANGUAGE:    English
AB   A uridine-based linker immobilized onto polystyrene beads at the 5'
     terminus via a phosphodiester group and then used as a universal
     DNA synthesis support gives post synthesis
     DNA cleavage in 2 hrs or less without alkali metal
     salts. DNA produced with the new support was analyzed by HPLC, MALDI mass
     spectroscopy and PAGE. Mass analysis showed DNA of equivalent quality to
     that produced with standard CPG supports, without contaminating materials
     resulting from linker or support backbone decomposition.

L7   ANSWER 2 OF 9  BIOSIS  COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER:    1997:509108  BIOSIS
DOCUMENT NUMBER:     PREV199799809131
TITLE:               RNA synthesis using a universal
                     , base-stable allyl linker.
```

02955 USA
SOURCE: Nucleic Acids Research, (1997) Vol. 25, No. 20, pp. 3990-3992.
ISSN: 0305-1048.
DOCUMENT TYPE: Article
LANGUAGE: English
AB The application of a **universal** allyl **linker**, 9-O-(4,4'-dimethoxytrityl)-10-undecenoic acid, to the solid phase **synthesis** of **RNA** molecules is described. Use of this linker simplifies significantly the isolation and purification steps in **RNA synthesis**. The **linker** is **universal** in that it does not contain a nucleoside. The 3' terminal nucleoside is instead attached to the support in the first coupling step. The resultant RNA fragment is then obtained as the 3-phosphate. The linker is base-stable, and thus all reagents used during deprotection can simply be washed away, leaving the RNA attached. Further, tritylated short fragments resulting from chain **cleavage** for any reason are also washed away before separation from the support. This linker is compatible with any current synthetic methodology and any amino functionalized support. Of course, silica supports would not be compatible with fluoride reagents. It could also be used to advantage for other applications. Because it is **cleaved** under conditions orthogonal to those used during many common reactions, the range of postsynthetic manipulations that can be carried out without **cleavage** from the support is extended significantly.

L7 ANSWER 3 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1996:413174 BIOSIS
DOCUMENT NUMBER: PREV199699154230
TITLE: A new **universal linker** for solid phase **DNA synthesis**.
AUTHOR(S): Lyttle, Matthew H. (1); Hudson, Derek; Cook, Ronald M.
CORPORATE SOURCE: (1) Biosearch Technologies Inc., 40 Mark Drive, San Rafael, CA 94903 USA
SOURCE: Nucleic Acids Research, (1996) Vol. 24, No. 14, pp. 2793-2798.
ISSN: 0305-1048.
DOCUMENT TYPE: Article
LANGUAGE: English
AB A method is described as an alternative to the use of nucleoside pre-functionalized supports for **DNA synthesis**. The procedure should allow the generation of 3'-OH terminal moieties of any natural or modified DNA fragment using a single derivatized solid support material. The method utilizes 1-O-(4,4'dimethoxytrityl)-2O-succinoyl-3-N-allyloxycarbonylpropane immobilized on amino-propyl CPG followed by subsequent coupling of unit phosphoramidites. Work up is accomplished by removal of the 3-N-allyloxycarbonyl group (Pd(0) at 50 degree C for 15 min.) followed by **cleavage** under very mild conditions (aqueous TEAA NH-3 buffer pH .0, room temperature) to release the desired product. The mechanism is believed to involve nucleophilic attack of the amine-derived amine group on the 3 phosphate triester, followed by elimination of the desired product. **DNA synthesis** with the new support and with classical nucleotide synthesis supports have been performed, and the products shown to be identical. Further proof of product integrity was given by MALDI mass spectral studies and the efficacy of DNA primers made with the new support in PCR amplification.

L7 ANSWER 4 OF 9 SCISEARCH COPYRIGHT 2002 ISI (R)
ACCESSION NUMBER: 2001:985552 SCISEARCH
THE GENUINE ARTICLE: 498VP

underivatized solid-phase supports

AUTHOR: P an E T (Reprint); Yu S Y
CORPORATE SOURCE: Univ Calgary, Dept Biochem & Mol Biol, Calgary, AB T2N 4N1, Canada (Reprint)
COUNTRY OF AUTHOR: Canada
SOURCE: TETRAHEDRON LETTERS, (17 DEC 2001) Vol. 42, No. 51, pp. 8843-8846.
Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
ISSN: 0040-4039.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English.
REFERENCE COUNT: 29

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Linker phosphoramidite reagents containing a protected nucleoside with a **cleavable** 3'-ester linkage to either succinic acid, diglycolic acid, or hydroquinone-O,O' diacetic acid (Q-Linker) allow the 3'-terminal nucleoside of an oligonucleotide sequence to be attached to underivatized 'Universal' amino or hydroxyl supports. After solid-phase **oligonucleotide synthesis**, treatment with NH4OH **cleaves** the 3'-ester link to the support and produces oligonucleotides with only 3'-OH ends. No changes to existing phosphoramidite synthesis cycles, **cleavage**, or deprotection methods are required. (C) 2001 Published by Elsevier Science Ltd.

L7 ANSWER 5 OF 9 SCISEARCH COPYRIGHT 2002 ISI (R)
ACCESSION NUMBER: 96:434699 SCISEARCH
THE GENUINE article: UN715
TITLE: A **UNIVERSAL** ALLYL **LINKER** FOR SOLID-PHASE SYNTHESIS
AUTHOR: ZHANG X H; JONES P A (Reprint)
CORPORATE SOURCE: RUTGERS STATE UNIV, DEPT CHEM, POB 939, PISCATAWAY, NJ, 08855 (Reprint); RUTGERS STATE UNIV, DEPT CHEM, PISCATAWAY, NJ, 08855
COUNTRY OF AUTHOR: USA
SOURCE: TETRAHEDRON LETTERS, (27 MAY 1996) Vol. 37, No. 22, pp. 3789-3790.
ISSN: 0040-4039.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 16

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB We report synthesis of a **universal** allyl **linker** for solid-phase synthesis, 4-O-(4,4'-Dimethoxytrityl)-10-undecenoic (3), that has a reactive terminal double bond Since allyl **cleavage** occurs under conditions orthogonal to those used during the solid-phase **synthesis** and deprotection of **DNA** or RNA fragments, this linker extends the range of post-synthetic manipulations that can be carried out without **cleavage** from the support, and means that this linkage could be used to construct affinity columns. Alternatively, it should be possible also to **cleave** fully protected molecules from the support if so desired. Copyright (C) 1996 Elsevier Science Ltd

L7 ANSWER 6 OF 9 CA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 136:369951 CA
TITLE: **Cleavage** of **universal** **linkers** from an **oligonucleotide** for solid phase **synthesis** with gaseous nucleophilic amine compound

SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002038728	A2	20020516	WO 2001-US43013	20011108

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2000-245713P P 20001109

AB The invention relates to a method for **cleaving** a linker, which attaches an oligonucleotide to a solid phase, from an oligonucleotide to give free oligonucleotide comprising contacting an oligonucleotide-linker-solid phase conjugate with an effective amt. of a gaseous nucleophilic amino compd. under conditions that result in the removal of the linker, thereby yielding the free oligonucleotide. Specifically, the invention relates to a method for **cleavage** of a linker from an oligonucleotide, comprising contacting a conjugate comprising an oligonucleotide; a vicinal diol contg. linker, which is not the 3'-terminal nucleotide; and a solid support with a gaseous nucleophilic compn. under conditions that result in the **cleavage** of an ester linkage between the first constituent of the oligonucleotide (usually the 3'-OH of the 3' terminal nucleotide) and the phosphate of the linker, resulting in the **cleavage** of the oligonucleotide from the linker. In a most preferred embodiment, the oligonucleotide, linker, solid support conjugate will be reacted with hydrated ammonia vapors at about 95.degree. for about 1.0 min.

L7 ANSWER 7 OF 9 CA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 132:50213 CA
TITLE: **Universal** allyl **linker** for solid-phase nucleic acid synthesis
INVENTOR(S): Zhang, Xiaohu; Jones, Roger A.
PATENT ASSIGNEE(S): Rutgers the State University of New Jersey, USA
SOURCE: U.S., 10 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6005125	A	19991221	US 1997-852110	19970506

PRIORITY APPLN. INFO.: US 1996-16948P P 19960506
OTHER SOURCE(S): MARPAT 132:50213

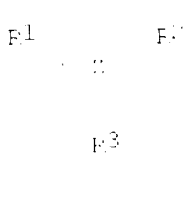
AB A **universal linker** for solid-phase nucleic acid synthesis that is **cleaved** under conditions orthogonal to those used during the synthesis and deprotection of nucleic acids such as dsDNA [illegible] fragments is disclosed. The invention includes compds. of the

more preferably from 1 to about 100 or greater; R2 = alkyl (C1-20) or greater; X = 4,4'-dimethoxytrityl).

L7 ANSWER 8 OF 9 CA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 130:25267 CA
TITLE: Reagents and solid supports for improved synthesis and labeling of polynucleotides
INVENTOR(S): Wang, Edge F.
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 17 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5440879	A	19981124	US 1996-761711	19961206

OTHER SOURCE(S): MARPAT 130:25267
GI



AB The invention provided methods and compns. for **oligonucleotide synthesis** and labeling using four groups of compds. Group 1: I (Z = ring structure contg. 3-8 C, O, N, and/or S, H; R1 = R2 = label or protecting group attached to ring through a linker arm; R3 = coupling group or solid support attached to ring through a linker arm), Group 2: R4X-CR5R6R7 (II)(R4 = label attached to carbon atom through a functional group; R5 = label or protecting group attached to carbon atom through a linker arm; R6 = coupling group or solid support attached to ring through a linker arm; R7 = H, lower alkyl group; X = NH, O, S), Group 3: R10R9R8C1-L-C2R11R12OR13 (III) (R8 = N,O,S; R9 = coupling group or solid support attached C1 through a linker arm; R10,R11,R12 = H, lower alkyl group; R13 = protecting group; L = linker arm contg. 0-4 C, O, S, N) and Group 4: R14-C5-CR15R16-Y-R17 (IV) (R14 = nucleoside; R15,R16 = H, lower alkyl; R17 = coupling group or solid support attached to the C through a functional group, Y; Y = NH, S, O). The subject compds. have either rigid ring or long linear linker structures and provide enhanced coupling efficiencies over prior art labeling reagents because of lack of stereo hindering and/or provide more convenient and cost-effective syntheses. These novel linkers also contain a base labile structure which provides: labeling at 5' end with regular solid supports, **cleaving** under mild conditions, and achieving higher yield because of the complete **cleavage** and higher purity because the mild conditions will not bring down the impurities on the solid support. When used in a solid support pre-attached with either a nucleotide for unlabeled **oligonucleotide synthesis**, or a label for 5' end labeled **oligonucleotide synthesis**, or an alternate structure to act as an **universal** support, these **linkers** provide solid supports requiring only mild **cleavage** conditions.

L7 ANSWER 9 OF 9 CA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 107:171975 CA
TITLE: Covalently **linked** complementary oligodeoxynucleotides as **universal** nucleic acid sequencing primer linkers
INVENTOR(S): Van de Sande, Johan; Kilisch, Bernd W.; Krawetz, Stephen; Schoenwaelder, Karl Heinz
PATENT ASSIGNEE(S): University of Calgary, Can.
SOURCE: Eur. Pat. Appl., 31 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 224126	A2	19870603	EP 1986-115701	19861112
EP 224126	A3	19890301		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
JP 63219380	A2	19880913	JP 1986-276870	19861121

PRIORITY APPLN. INFO.: US 1985-801900 19851126

AB Sequencing primer linkers (splinkers) for DNA sequencing are characterized by having 2 partially complementary strands, a **cleavable** bridge or site, and a single strand capable of being covalently joined to a DNA strand and capable of serving as a primer for an enzyme that produces a complementary strand from a single-stranded DNA template. In addn., the splinker may be labeled so as to provide a detectable signal. Probes may also be produced. Splinkers were **synthesized** on a **DNA synthesizer** using phosphoramidite chem. and the resulting oligodeoxynucleotides were purified by preparative polyacrylamide electrophoresis. Splinkers were 5' end labeled immediately prior to ligation to DNA fragments for sequencing. In sticky-end ligations, the splinker was added at a ratio of 20:1 in terms of 5' phosphate ends and reacted for 2 h with 1 unit of T4 DNA ligase. The reactions were terminated by extn. with PhOH and the splinker ligated fragments were recovered by EtOH pptn. A 2nd restriction cut was made and the resulting fragments contg. a single splinker at 1 end were sepd. by electrophoresis. Fragments larger than 0.5 kb were electrophoresed and resolved on agarose gels and purified by a freeze-squeeze method (Tautz and Renz, 1983). The nucleic acids were used directly for dideoxy sequencing.

=> s pires, P?/au or gebeyehu, G?/au
L9 5'5 PIRES, P?/AU OR GEBEYEHU, G?/AU

=> s l9 and (dna or rna or oligonucl? or ribonucl? or deoxyribonucl?) (5n) synth?)
L10 5 L9 AND (DNA OR RNA OR OLIGONUCL? OR RIBONUCL? OR DEOXYRIBONUCL? ?) (5N) SYNTH?

=> dup rem l 10
PROCESSING COMPLETED FOR L10
L11 7 DUP REM L10 (8 DUPLICATES REMOVED)

=> d his

(FILE 'HOME' ENTERED AT 09:30:09 ON 24 JUN 2002)

FILE 'BIOSIS, MEDLINE, SCISEARCH, CA, CAPLUS' ENTERED AT 09:30:30 ON 24

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L2            15 S L1 AND (UNIVERS? LINK?)
L3            15 S L2 AND (CLEAV?)
L4             5 DUP REM L3 (10 DUPLICATES REMOVED)
L5            38 S L1 AND (UNIVERS? (3N) LINK?)
L6            14 DUP REM L5 (24 DUPLICATES REMOVED)
L7             9 S L6 AND CLEAV?
L8             1 S L7 AND GAS?
L9           555 S PIPES, P?/AU OR GEBEYEHU, G?/AU
L10           15 S L9 AND ((DNA OR RNA OR OLIGONUCL? OR RIBONUCL? OR DEOXYRIBON
L11            7 DUP REM L10 (8 DUPLICATES REMOVED)

=> s ((dna or rna or oligonucl? or ribonucl? or deoxyribonucl?) (5n) synth?)
L12      434614 ((DNA OR RNA OR OLIGONUCL? OR RIBONUCL? OR DEOXYRIBONUCL?) (5N)
                SYNTH?)

=> s l12 and (univers? (5n) link?)
L13           38 L12 AND (UNIVERS? (5N) LINK?)

=> d his

     (FILE 'HOME' ENTERED AT 09:30:09 ON 24 JUN 2002)

     FILE 'BIOSIS, MEDLINE, SCISEARCH, CA, CAPLUS' ENTERED AT 09:30:30 ON 24
     JUN 2002
L1        390977 S (DNA OR RNA OR OLIGONUCL?) (3N) SYNTH?
L2            15 S L1 AND (UNIVERS? LINK?)
L3            15 S L2 AND (CLEAV?)
L4             5 DUP REM L3 (10 DUPLICATES REMOVED)
L5            38 S L1 AND (UNIVERS? (3N) LINK?)
L6            14 DUP REM L5 (24 DUPLICATES REMOVED)
L7             9 S L6 AND CLEAV?
L8             1 S L7 AND GAS?
L9           555 S PIPES, P?/AU OR GEBEYEHU, G?/AU
L10           15 S L9 AND ((DNA OR RNA OR OLIGONUCL? OR RIBONUCL? OR DEOXYRIBON
L11            7 DUP REM L10 (8 DUPLICATES REMOVED)
L12      434614 S ((DNA OR RNA OR OLIGONUCL? OR RIBONUCL? OR DEOXYRIBONUCL?) (5
L13           38 S L12 AND (UNIVERS? (5N) LINK?)
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